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Application/Control Number: 10/646,056

Art Unit: 1753

page 2 of 6

In the claims:

Please amend the claims as follows:

1. -8. (canceled)

9. (currently amended) A mechanical thermo-voltaic solar power system,
5 comprising:

a solar light collector array comprised of a plurality of light collector elements
mounted to a mounting board, each said light collector element being further
comprised of:

a primary collection lens for collecting light from a light source;

10 one or more secondary fine-focus lens for receiving focused light from said
primary collection lens;

an optical housing for structurally holding said primary and secondary lenses,
said housing further enclosing said focused light from said collection lens;

15 an optical conduit coupled to the output of said secondary fine-focus lens for
delivering collected light to a mechanical generator;

a light collector alignment means, said alignment means having two or more
collector alignment photocells, said photocells being attached to a
servomotor subassembly mounted at the base of said light collector
element for aiming said light collector element at said light source for
20 maximum light collection; and

an alignment processing circuit mounted in said servomotor subassembly for
automatically aligning said light collector element for maximum output;

a mechanical generator, said generator comprised of;

25 a heat chamber, said heat chamber receiving a plurality of said optical
conduits from said light collector array, said conduits connected to said
heat chamber by optical attaching means;

a gas burner mounted below said heat chamber for applying auxiliary heat to
said heat chamber; and

30 an electrical generator mechanically coupled to the rotatable output of said
mechanical generator for providing a source of electrical power; and

Application/Control Number: 10/646,056 Art Unit: 1753

page 3 of 6

a storage and retrieval unit for receiving electrical power from said electrical generator, said storage and retrieval unit further comprising:
a power distributor, a first input of said distributor being coupled to the output of said electrical generator, a first output of said power distributor providing electrical power to an application load, and a second output of said power distributor supplying power to the electrodes of a water separator, said water separator being filled with water, said water separator separating said water into hydrogen and oxygen;
a hydrogen pump, the input of said pump coupled to the hydrogen output of said water separator;
a hydrogen tank, the input of said tank being coupled to the output of said hydrogen pump, the output of said hydrogen tank being connected to said gas burner for supplying auxiliary heat to said system;
a fuel cell, the input of said fuel cell being connected to the output of said hydrogen tank, the output of said fuel cell being connected to a second input of said power distributor; and
an additional stationary photocell sensor for the measuring ambient light level, the output of said additional photocell sensor used to switch said system between the storage and retrieval modes.

10. (original) The assembly of claim 9, wherein said primary collection lens is a large-area flat lens for collecting and focusing said light to a smaller area at the surface of said secondary fine-focus lens.
11. (original) The assembly of claim 9, wherein said optical conduit is further comprised of one or more fiber optic cables.
12. (original) The assembly of claim 9, wherein said alignment photocells are mounted at the bottom of opaque cylindrical tubes, thereby providing a maximum alignment signal when said tubes are aimed directly at said light source.
13. (original) The assembly of claim 9, wherein said servomotor subassembly is further comprised of:
a first servomotor for aligning for pitch; and

Application/Control Number: 10/646,056 Art Unit: 1753

page 4 of 6

a second servomotor for aligning yaw.

14. (original) The system of claim 9, wherein said mechanical generator is a Stirling engine, said Stirling engine for use in higher efficiency systems.

15. (original) The system of claim 14, wherein the hot node of said Stirling engine is contained within the heat chamber of said power system.

16. (original) The system of claim 14, wherein said Stirling engine further comprises a cold node.

17. (original) The system of claim 9, wherein said mechanical generator is a steam turbine engine, said steam turbine for use in a lower cost system.

18. (original) The system of claim 17, wherein said boiler of said steam turbine forms the heat chamber of said power system.

19. (original) The system of claim 9, further comprising a bank of batteries wherein unused electricity is stored.

20. (canceled)